



Who's Watching Your Kitchen?

Accurate data, smart appliances and close monitoring help restaurants ensure food safety and control quality

by Reid A. Paul, Contributing Editor

March 2002

Pal's Sudden Service simply loves to see the health inspector. It's no wonder. The chain of 17 restaurants in Tennessee and Virginia receives an average grade of 98 on health-inspection reports while most of its competitors' grades hover in the low 80s. "Our point of view," explains Thom Crosby, Pal's president, "is that 'wow' what a wonderful thing, the government comes in and helps us to manage our risk."

What Pal's and a growing number of restaurant operators are beginning to recognize is that carefully managing the food-safety risk makes good business sense. Better data capture from ovens, freezers and grills not only helps managers ensure food is properly cooked, but also helps maintain the restaurant's highest level of operational standards.

A major impetus for improvements in food safety has been HACCP regulations (See sidebar on page 34.) developed by the U.S. Food and Drug Administration. HACCP regulations require that a restaurant conduct a hazard analysis of its operation and determine the critical control points where food-safety hazards can be prevented before they happen.

What Pal's is doing is keeping careful watch over its food-prep operation with the SysDine enterprise system from Tennessee-based Silver Creek Technologies (www.silvercreektech.com). Pal's hires independent health inspectors to supplement government inspections so it can head off problems quickly. At Pal's suggestion, Silver Creek built a database of health-inspection reports into the SysDine system that is accessible enterprise-wide. As Crosby explains, "every office in every restaurant gets real-time data from each inspection so everyone is learning from the experience."

Monitoring the supply chain

Monitoring food safety, of course, starts well before the health inspection. Efficient Foodservice Response (EFR, www.efr.org), an advocacy group comprised of leading restaurants, food suppliers and distributors, has long

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pushed for better control and monitoring of food shipments.

As Mark Allen, president of EFR, notes, it was not until restaurants began to push distributors that bar coding shipments of food and supplies really took off. "Bar coding is a key piece in the restaurant operator's ability to maintain food safety," Allen explains. "If a supplier does not label a case it becomes very difficult to trace it through the supply chain. With a bar code you know where it come from and where it is going."

According to Allen, EFR is working on an initiative to add lot-code data to bar codes to facilitate product recalls. Other information is being added to bar codes as well, such as best-use-by date to ensure freshness and unique serial numbers for quality control. EFR is also pushing to replace static bar codes with radio frequency identification (RFID) tags that can transmit data to sensors without requiring someone to scan each bar code individually.

At Darden Restaurants, detailed barcode records are only the beginning of a long process of monitoring the supply chain. Not only does Darden insist on detailed bar code information from suppliers worldwide, it also sends out its own health inspectors — 20 percent work overseas — to monitor supplier operations regularly. "We take a very proactive approach," explains Tom Chesnut vice president of quality assurance for Darden. "We want to know what is going on all the way to the restaurant's back door."

Darden has also set up a microbiological and analytical laboratory near its corporate headquarters in Orlando, Florida. Darden tests each supplier every year to ensure continuing food quality. It has also cut the testing time from seven to two days. The testing results have become a significant factor in renewing supplier contracts.

And Darden doesn't stop there. "We're always trying to push the technology to the next level," explains Chesnut. Working with Sensitech (www.senesitech.com), Darden has developed multi-lingual smart thermometers that can be plugged into a computer to analyze results and spit out an exception report, allowing Darden to fine-tune food preparation. At the moment, two restaurants are testing a new remote-monitoring version that pages the manager if the temperature is not correct.

Minding the store

Monitoring the entire food-prep process is central to Dan Skully's job as manager of a Burger King in Monticello, Florida. Skully's Burger King is one of six units owned by Johnson and Johnson properties that uses IntelliKitchen and Zeom.net from Apigent Solutions (www.apigent.com). IntelliKitchen provides real-time reports on food prep speed, times how long customers are waiting and reports on oven and grill temperatures.

Even when Skully is at home, he can log on and see what is going on in his restaurant. Skully, who prides himself on running a clean operation, watches on-line video of store operations. "I am able to see across the front counter to make sure cashiers sanitize their hands every time they touch money," he explains. Skully can call the store and immediately correct the problem without leaving home.

Skully also strives to make sure food is fresh when served. The Bin Manager tracks shelf life, prompting employees to discard old food and to make fresh, new items. Intellikitchen creates barcode and wrapper seals, and employees must scan every item before it is given to customers to make sure it is fresh and the correct item for the order.

Another way to use IT to ensure safety in the food-prep process is to network appliances throughout the kitchen to monitor their operation. This is being done by Food Automation - Service Techniques (FAST) Inc. (www.fastinc.com), which recently announced an agreement with Marshall Air appliances and FAST's Smart Commercial Kitchen (SCK) technology.

Through this agreement FAST will provide embedded-control solutions and communications technology to Marshall Air's (www.marshallair.com) broilers and holding cabinets. Equipped with this hardware and software, foodservice operators will be able to monitor kitchen equipment on the MySCK.net Enterprise Portal, a Web-based reporting application for data collection and remote managing. This upgraded functionality is being offered to restaurants in an ASP-based environment on a subscription basis.

In addition to Marshall Air, FAST also offers this service to refrigeration equipment produced by Traulsen (www.traulsen.com). Existing kitchen equipment can be retrofitted for the service while in place and give managers access to real-time performance never before available in the kitchen.

This attention to detail and food safety is gaining recognition. Pal's Sudden Service recently became the first restaurant to win the Malcolm Baldrige National Quality award.

"The general public is much better educated now and they know about an operator's sloppiness," notes Pal's Crosby. "People ask us what are we doing and we tell them with pride all about it."

HACCP Regs: Voluntary Today, Mandatory Tomorrow?

What is HACCP (pronounced "has-sip")? HACCP is the systematic approach to food safety that involves an in-depth analysis of all sources of hazards to determine

critical points at which control can be applied to eliminate them. The word "critical" is key since HACCP allocates finite resources to those points deemed necessary to reduce risk to a "statistically insignificant" level. The results of the analysis become a written HACCP plan that must be verified and periodically reevaluated to confirm that it results in the production of safe food.

The HACCP plan includes the following points:

- 1. Conduct a hazard-analysis study** that includes a list of steps where significant hazards occur and describes preventative measures.
- 2. Identify critical control points (CCP)** in the process. A CCP is a point, step or procedure where control can be applied and a food-safety hazard can be prevented, eliminated or reduced to acceptable levels.
- 3. Establish critical limits** for preventative measures associated with each identified CCP.
- 4. Establish CCP monitoring** for using the results to adjust the process and maintain control.
- 5. Establish corrective action** to be taken when monitoring indicates there is a significant deviation from an established critical limit or targeted metric.
- 6. Establish effective record-keeping** procedures that document the HACCP system.
- 7. Establish procedures** for verifying the HACCP system is working correctly.

After restaurants identify the specifics in steps one through three, above, technology can help achieve compliance with the remaining four steps. This can be done by monitoring operations through wireless thermometers placed directly into food, freezers, refrigerators, fryers and ovens. Temperatures are continuously monitored against defined parameters. If deviations occur, an appointed person is contacted via wireless phone, pager or PDA to address the situation. The information is then compiled into a central report at corporate headquarters that can be used to prove compliance with Federal Food and Drug Administration (FDA) regulations.

While some HACCP guidelines are mandated by the FDA many are recommendations followed voluntarily. However, the restaurant industry is closely following FDA efforts to transition from recommendations to requirements. In addition, restaurants are looking at food safety monitoring/reporting as a way of managing exposure to potential litigation.

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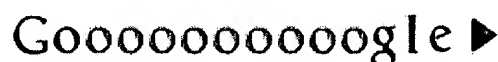
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FDA HACCP Principles

- 1. Identify critical control points
- 2. Establish preventive measures with critical limits
- 3. Establish monitoring procedures
- 4. Define real-time corrective actions if outside limits
- 5. Set up process, measurements to verify system works
- 6. Analyze hazards - FDA specifies different categories
- 7. Document authenticated data to validate compliance



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Apigent Solutions



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NEWS

CONTACT: Apigent Solutions
800/664-8228
www.apigent.com

For Immediate Release

Apigent Solutions™ Introduces IntelliKitchen®

New kitchen management system expands, enhances existing operations systems

OKLAHOMA CITY (Dec. 12, 2000) – Too often, restaurant operators spend their technology dollars on POS system upgrades while kitchen operations, where 95 percent of the order process occurs, go unsupported.

To address this dilemma and improve overall customer satisfaction, Apigent Solutions™, a leading provider of services and products for multi-unit operators in the food service, convenience store, retail, grocery, chain drug and hospitality industries, has introduced a kitchen management system called IntelliKitchen®.

According to Apigent CEO Jim Melvin, IntelliKitchen offers operators in the food service industry a full-featured kitchen management system designed to support the order life cycle through the capture and automation of existing, effective operational processes.

“IntelliKitchen was designed to address specific operational needs for more sophisticated and efficient kitchen management,” says Melvin. “We brought years of experience in the restaurant industry to the table when we began developing IntelliKitchen. Users will find the system highly effective in eliminating challenges faced by operations managers in a variety of restaurant environments.”

-more-

According to Melvin, IntelliKitchen accelerates workforce speed and efficiency, improves order accuracy, increases line productivity and ensures compliance with governmental food quality standards through flexible workflow routing and intuitive information display.

Also, IntelliKitchen employs innovative technology that enables single-point integration of new and legacy systems. As a result, the system adds value to existing POS systems without limiting the operations' future technology acquisitions or upgrades.

Further, Melvin suggests that restaurant operations will be greatly enhanced through increased speed, efficiency and service capacity via optimized kitchen throughput. Similarly, IT personnel will be attracted to IntelliKitchen's flexible configuration options, adaptability and scalability.

Individuals interested in learning more about IntelliKitchen and other Apigent Solutions products can visit the company's Web site at www.apigent.com.

ABOUT APIGENT SOLUTIONS

Apigent Solutions is the creator of products and services that help multiunit operators transform raw data into actionable information they can use to more effectively manage their business. Apigent offers a variety of innovative technologies, including the SunTone-certified ZEOM.net™ operational information service, centrally hosted back office applications powered by Lawson and the IntelliKitchen® kitchen management system.

Apigent is a Premier member of the IBM Service Providers for e-business Initiative and one of Sun Microsystems' Elite Business providers. The company originated as the technology development subsidiary of Chickasaw Holding Company, a \$180 million telecommunications company with 125,000 customers in 11 states. Chickasaw remains a major shareholder in Apigent.

For more information about Apigent Solutions, visit the company's Web site at <http://www.apigent.com> or call 800-664-8228.

Dialog
12/14/02

Your SELECT statement is:
s zeom()net and temperature? ? and py<=2001

Reviewed all
hits
throughout
packet.

Items	File
-----	-----
1	9: Business & Industry(R)_Jul/1994-2002/Dec 13
4	15: ABI/Inform(R)_1971-2002/Dec 16
4	16: Gale Group PROMT(R)_1990-2002/Dec 16
1	20: Dialog Global Reporter_1997-2002/Dec 16
Examined 50 files	
Examined 100 files	
4	148: Gale Group Trade & Industry DB_1976-2002/Dec 13
Examined 150 files	
Examined 200 files	
Examined 250 files	
Examined 300 files	
Examined 350 files	
3	553: Wilson Bus. Abs. FullText_1982-2002/Oct
3	570: Gale Group MARS(R)_1984-2002/Dec 16
1	583: Gale Group Globalbase(TM)_1986-2002/Dec 13
1	610: Business Wire_1999-2002/Dec 16
Examined 400 files	
1	621: Gale Group New Prod. Annou. (R)_1985-2002/Dec 13
1	649: Gale Group Newswire ASAP(TM)_2002/Dec 09
Examined 450 files	
Examined 500 files	
9	994: NewsRoom 2001

12 files have one or more items; file list includes 547 files.
One or more terms were invalid in 100 files.

SM

Your SELECT statement is:
s intellikitchen and py<=2001

Items	File
-----	-----
7	16: Gale Group PROMT(R)_1990-2002/Dec 16
13	20: Dialog Global Reporter_1997-2002/Dec 16
Examined 50 files	
Examined 100 files	
7	148: Gale Group Trade & Industry DB_1976-2002/Dec 13
Examined 150 files	
Examined 200 files	
Examined 250 files	
Examined 300 files	
Examined 350 files	
3	610: Business Wire_1999-2002/Dec 16
Examined 400 files	
7	613: PR Newswire_1999-2002/Dec 16
7	621: Gale Group New Prod. Annou. (R)_1985-2002/Dec 13
1	636: Gale Group Newsletter DB(TM)_1987-2002/Dec 16
7	649: Gale Group Newswire ASAP(TM)_2002/Dec 09
Examined 450 files	
Examined 500 files	
4	781: ProQuest Newsstand_1998-2002/Dec 16
1	813: PR Newswire_1987-1999/Apr 30
8	994: NewsRoom 2001

11 files have one or more items; file list includes 547 files.
One or more terms were invalid in 100 files.

Set	Items	Description
S1	65	INTELLIKITCHEN AND PY<=2001
S2	17	RD (unique items)
S3	2	S2 AND TEMPERATURE? ?
S4	8	S2 AND MONITOR?

? show files

File 16:Gale Group PROMT(R) 1990-2002/Dec 16
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File 20:Dialog Global Reporter 1997-2002/Dec 16
(c) 2002 The Dialog Corp.

File 148:Gale Group Trade & Industry DB 1976-2002/Dec 13
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File 610:Business Wire 1999-2002/Dec 16
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File 613:PR Newswire 1999-2002/Dec 16
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File 621:Gale Group New Prod.Annou.(R) 1985-2002/Dec 13
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File 636:Gale Group Newsletter DB(TM) 1987-2002/Dec 16
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File 649:Gale Group Newswire ASAP(TM) 2002/Dec 09
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File 781:ProQuest Newsstand 1998-2002/Dec 16
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File 813:PR Newswire 1987-1999/Apr 30
(c) 1999 PR Newswire Association Inc

File 994:NewsRoom 2001
(c) 2002 The Dialog Corporation

?

Your SELECT statement is:

s (monitor? (3n) restaurant? ?) and temperature? ? and HACCP and
py<=2000

Items	File
-----	-----
1	15: ABI/Inform(R)_1971-2002/Dec 16
6	16: Gale Group PROMT(R)_1990-2002/Dec 16
Examined 50 files	
1	98: General Sci Abs/Full-Text_1984-2002/Nov
1	135: NewsRx Weekly Reports_1995-2002/Dec W2
Examined 100 files	
2	148: Gale Group Trade & Industry DB_1976-2002/Dec 13
1	180: Federal Register_1985-2002/Dec 16
Examined 150 files	
Examined 200 files	
Examined 250 files	
Examined 300 files	
1	484: Periodical Abs Plustext_1986-2002/Dec W2
Examined 350 files	
2	553: Wilson Bus. Abs. FullText_1982-2002/Oct
1	570: Gale Group MARS(R)_1984-2002/Dec 16
Examined 400 files	
2	621: Gale Group New Prod. Annou. (R)_1985-2002/Dec 13
3	636: Gale Group Newsletter DB(TM)_1987-2002/Dec 16
Examined 450 files	
Examined 500 files	
1	781: ProQuest Newsstand_1998-2002/Dec 16
2	810: Business Wire_1986-1999/Feb 28
Processing	
1	995: NewsRoom 2000

14 files have one or more items; file list includes 547 files.
One or more terms were invalid in 102 files.

Your SELECT statement is:

s (VSAT) and (HACCPPro or (HACCP()Pro))

Items	File
-----	-----
1	15: ABI/Inform(R)_1971-2002/Dec 16
1	16: Gale Group PROMT(R)_1990-2002/Dec 16
1	20: Dialog Global Reporter_1997-2002/Dec 16
1	47: Gale Group Magazine DB(TM)_1959-2002/Dec 11
Examined 50	files
1	88: Gale Group Business A.R.T.S._1976-2002/Dec 10
1	111: TGG Natl.Newspaper Index(SM)_1979-2002/Dec 10
Examined 100	files
3	148: Gale Group Trade & Industry DB_1976-2002/Dec 13
1	211: Gale Group Newsearch(TM)_2002/Dec 13
Examined 150	files
Examined 200	files
Examined 250	files
Examined 300	files
Examined 350	files
2	610: Business Wire_1999-2002/Dec 16
Examined 400	files
1	613: PR Newswire_1999-2002/Dec 16
2	621: Gale Group New Prod.Annou.(R)_1985-2002/Dec 13
2	649: Gale Group Newswire ASAP(TM)_2002/Dec 09
Examined 450	files
Examined 500	files
3	990: NewsRoom Current_2002/Dec 16
1	994: NewsRoom 2001

14 files have one or more items; file list includes 547 files.

4/9/8 (Item 1 from file: 994)
DIALOG(R) File 994:NewsRoom 2001
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0340526066 15M90TGK
Opto 22 Partners With Apigent Solutions-Companies' Internet-Enabled
SNAP-IT(TM) And ZEOM.net(TM) Offerings To Provide Remote *Monitoring* Of
Burger King(R) Restaurants
Internet Wire
Friday, October 19, 2001
JOURNAL CODE: ALMV LANGUAGE: ENGLISH RECORD TYPE: Fulltext
DOCUMENT TYPE: Newswire
WORD COUNT: 777

TEXT:

OKLAHOMA CITY, OK, Oct 19, 2001 (INTERNET WIRE via COMTEX) -- Opto 22, a manufacturer of high-quality hardware and software products for connecting the business world with the real world, announced today that it has entered into a strategic alliance with Apigent Solutions, an application service provider to the foodservice and convenience store industries, to provide comprehensive *monitoring* of multi-unit operations. The companies' first project under their new alliance will be a pilot deployment at Burger King restaurants in the United Kingdom. The two have already successfully partnered on integrations at several quick-serve restaurants in southern California including Sonic Drive-In and Taco Bell(R). Oklahoma City-based Apigent Solutions specializes in software products that enhance business performance and profitability by delivering real-time information from legacy business systems to site, field, and corporate personnel. The company's premier offering, ZEOM.net, is an IP-based enterprise operations information service that consolidates and distributes operational data from multiple locations to managers, data warehouses, and other applications via a standard Internet connection, pager, or wireless device. As a result, information from essential business systems (e.g., POS, lighting, refrigeration, security) and devices (e.g., electronic timeclocks; barcode readers; pressure, temperature and humidity sensors; video surveillance equipment) can be effectively collected and viewed through a secure, web-based portal.

Integration of ZEOM.net with Opto 22's SNAP-IT system for *monitoring* real world devices gives managers a cost-effective and easy method to track all aspects of restaurant operations," says Bob Sheffres, Opto 22, vice president. "With SNAP-IT *monitoring* all restaurant devices and systems and ZEOM.net's flexibility in providing data warehousing and reporting through their Web portal, all levels of management now have an Internet-based method to view and analyze real-world information. This gives operations managers the ability to react more quickly to changing business conditions, make informed decisions, and avoid potentially costly problems."

"This partnership with Opto 22 extends our ability to deliver the mission-critical operations information multi-unit organizations need to better run their businesses," explains Apigent Chief Executive Officer, Jim Melvin. "Our customers are very excited about applying the SNAP-IT and ZEOM.net technologies in support of equipment *monitoring*, loss prevention management, and HACCP reporting initiatives."

To promote their new, wide ranging partnership and integrated solution, Opto 22 and Apigent Solutions will participate in joint marketing ventures and cross promotional activities including trade show activities, joint press releases, and links to each other's web sites.

Electronic copies of this release and related photos are available at
www.ManageTheRealWorld.com/pressroom

ABOUT OPTO 22

Founded in 1974, Opto 22 is a manufacturer of hardware and software products that extend the reach of the traditional IT network to include non-IT devices, connecting the business world to the real world. The company's SNAP-IT(TM) offering is a web-enabled hardware appliance that connects to virtually any mechanical, electrical or electronic device. Using Simple Network Management Protocol, the connected devices can then be controlled and real-time operational data can be collected and delivered via a standard Ethernet network to any enterprise management system.

Currently, over 65 million devices worldwide are reliably connected to Opto 22 systems. Customer applications include enterprise management, remote *monitoring* and control, industrial automation, machine I/O, and data acquisition. All Opto 22 products are manufactured at the company's 160,000-square-foot manufacturing facility adjacent to the corporate headquarters in Temecula, California. For more information, contact Opto 22 headquarters at 800-321-OPTO or 909-695-3000. Visit our corporate Web site at www.opto22.com or our IT-specific site at www.ManagetheRealWorld.com.

ABOUT APIGENT SOLUTIONS

Apigent Solutions is the creator of products and services that help multiunit operators transform raw data into actionable information they can use to more effectively manage their business. Apigent offers a variety of innovative technologies, including the SunTone-certified ZEOM.net(TM) operations information service, centrally hosted back office applications powered by Lawson and the *IntelliKitchen*(R) kitchen management system.

Apigent is a Premier member of the IBM Service Providers for e-business Initiative and one of Sun Microsystems' Elite Plus service providers. The company originated as the technology development subsidiary of Chickasaw Holding Company, a \$180 million telecommunications company with 125,000 customers in 25 states. Chickasaw remains a major shareholder in Apigent. For more information about Apigent Solutions, visit the company's Web site at www.apigent.com or call 800-664-8228.

CONTACT: David Crump
Marketing Communications

Opto 22 909-695-3010

Julie Grosse

Director of Marketing Apigent Solutions

800-664-8228, ext. 3724

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" 3/9/31 (Item 1 from file: 724)
DIALOG(R) File 724: (Minneapolis) Star Tribune
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05307110

COMPUTER CAN DIGEST RESTAURANTS' FAULTS

STAR TRIBUNE (MS) - Thursday, November 2, 1989

By: Jim Fuller, Staff Writer

Edition: METRO Section: VARIETY Page: 01E

Word Count: 906

TEXT:

If you dine in Minneapolis restaurants, you are a bit safer today than you were a year ago. A hand-held computer has reduced the already slight risk that a restaurant meal will be accompanied by a little surprise, such as, say, salmonella, hepatitis or broken glass.

The miniature computer, 4 by 8 by about 1 1/2 inches and weighing less than a pound, also helps Minneapolis Health Department inspectors ensure that hotel guests don't have vermin for roommates, that perishable food in grocery stores is stored at proper temperatures and that proprietors of food businesses understand exactly what they must do to **comply** with federal, state and local health regulations.

Minneapolis supplied its food and sanitation section inspectors with the computers in September 1988. It was the first city in the state to do so; Bloomington followed suit a few months ago. Minneapolis and its biggest suburb are among a mere handful of cities in the country to use the machines thus far, though Minneapolis health officials expect the number to increase rapidly.

Until the arrival of the computers, local health inspectors had functioned the same way for decades. They carried lists of "inspection points" running into the hundreds of items: Is the dishwashing water hot enough? Are temperatures low enough for cold-storage items? Are toxic materials properly stored? Are surfaces that come in direct contact with food clean?

The inspectors scribbled notes as they moved through the lists. Later, sometimes days later, they deciphered what they had written, wrote reports on individual inspections and sent copies to the business owners, along with orders and **suggestions** for correcting deficiencies.

Oren Larson, supervisor of the nine field inspectors and three field supervisors in the Minneapolis Health Department's food and sanitation section, conceded that the inspectors sometimes had trouble reading their own notes. Much more often, restaurateurs and other business owners found it difficult to decipher the hand-written inspection reports, which resulted in delays in fixing faults in their operations.

For several years, various manufacturers have offered hand-held computers for use by health inspectors, but they weren't really suited to the work, Larson said. The memories were too small, they were difficult to reprogram as health regulations changed, or they were too **complicated** to use. Some of the portables lacked printers or had inadequate ones. And the small computers wouldn't communicate with a department's full-size computer, which meant that inspectors still had to turn in reports to be hand-fed into central computers for permanent records on individual businesses and compilation of data on the food industry.

About a year and a half ago, Minneapolis officials learned of the **hand-held** computer developed by Hewlett Packard at the request of **food inspectors** in Oregon who had seen foresters using such devices to count and categorize trees.

A few inspectors worried about learning to use the devices, Larson said, but the objections quickly dissipated. Each of the little computers is programmed with 322 "inspection points" and information on up to 200 businesses. The computers are matched to printers about the size and weight

of portable typewriters.

An inspector heading into Pop's Cafe can punch a key or two and get a heading that includes the establishment's name, address, owner, date of inspection and other pertinent data. The inspector moves through the restaurant or store, noting a violation of code with the touch of a key under the appropriate heading, and typing in more specific comments. There is a category for "clean food contact surface," for instance. If there is a problem, the inspector hits a key to note that, then types in "meat slicer," if that is where the offense occurred.

When an inspection is completed, the computer is plugged into a printer, which is carried in a case the size of a portable typewriter case, and the business owner gets a printout of the inspection on the spot. The printers plug into standard power outlets, or can be operated on batteries. A computer-printer set costs the city \$3,200. The Health Department has 13 of them, one for each field inspector and field supervisor and one spare.

The Health Department will need more time to determine how much time is saved by use of the computers, Larson said, but he estimated that inspectors save about a half-hour per inspection just on report preparation. That's a considerable saving, given an average of two inspections a year for each of approximately 2,000 businesses.

On the other hand, Larson added, because they get the information immediately, business owners often want to talk with inspectors on the spot about how to correct their deficiencies; that may increase time spent on an inspection, but it improves compliance with health regulations.

Larson said problems are corrected more quickly since the advent of the computers. And he expects that as data is collected from the hand-held computers into his section's office computer, the Health Department will become more efficient at spotting trends in code violations and recognizing trouble spots that may require changes in regulations.

"We don't have the numbers yet, but I'm sure we're seeing an increase in compliance (with health codes) as a result of the computers," Larson said. "The only problems so far is that the small screen on the hand-held computers doesn't show much information at one time, and the tiny keyboard is a little awkward for people with big hands."

jaw

CAPTION:
PHOTO

STAR TRIBUNE : MINNEAPOLIS/ST. PAUL : Copyright 1989

3/9/16 (Item 1 from File: 553)
DIALOG(R) File 553:Wilson Bus. Abs. FullText
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03039945 H.W. WILSON RECORD NUMBER: BWBA95039945

Texas town serves up food safety.

AUGMENTED TITLE: FDA's Electronic Inspection System for Plano restaurants
Gomez, Rachel Welch

Safety & Health (Saf Health) v. 151 (Mar. '95) p. 76-7

DOCUMENT TYPE: Feature Article ISSN: 0891-1797

LANGUAGE: English

COUNTRY OF PUBLICATION: United States

RECORD TYPE: Abstract RECORD STATUS: New record

ABSTRACT: Since January 1994, Plano, Texas, has served as one of 6 test sites for the Food and Drug Administration's Electronic Inspection System (EIS) for inspecting food safety at restaurants. The EIS software combines the conventional 44-point **food** establishment **inspection** system with current **food** science. Under the system, health inspectors enter detailed information on **portable** computers loaded with a database of **food inspection** information, including, for example, a routinely updated list of approved oyster-harvest sites from the Food and Drug Administration. Inspectors can **complete** the whole restaurant inspection process while still on-site with a restaurant's manager. Restaurant managers immediately receive **complete** printouts, with detailed lists of **instructions** to correct violations. Plano expects to save over \$12,000 in the first full year of operation of the EIS.

DESCRIPTORS:

Seafood inspection; Restaurants--Inspection; Restaurants--Software;
Restaurants--Plano (Tex.)

SIC CODES: 9641; 5812; 7372

3/9/3 (Item 1 from file: 16)
DIALOG(R) File 16:Gale Group PROMT(R)
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09317368 Supplier Number: 81139147 (THIS IS THE FULLTEXT)
**Temperature tracking ensures you are HACCP compliant : the Testo HACCP
manager measures the food related temperature values you need to be HACCP
compliant . (Quality control).(Testo Ltd.)**

Frozen and Chilled Foods, v55, n10, p12(1)

Nov, 2001

ISSN: 0265-6485

Language: English Record Type: Fulltext

Document Type: Magazine/Journal; Trade

Word Count: 354

TEXT:

If you are checking temperature of incoming food products, storing, preparing or serving food products, you will know that you need to **comply to food inspector checks and the HACCP guidelines** . Leading portable instrument manufacturer Testo has designed the user friendly Testo 946 HACCP Managers thermometer specifically to measure and store all the critical temperature values that are checked by food inspectors.

The Testo 946 provides accurate records for monitoring food temperature on delivery during production, storage, and distribution - including core temperatures of fresh and cooked meats - providing comprehensive proofs for inspectors.

The data measured by the Testo 946 can be identified as one of the end users products, and either printed on location using the Testo printer, or stored for future analysis using a PC. Interestingly, the testo 946 can record up to 99 locations and save a maximum of 3000 readings, and conveniently has an audible and visual alarm to warn if product temperature limits have been exceeded.

"The Testo 946 is a vital measuring thermometer for anyone who need to conform to the HACCP **guidelines** ", said Barry Whittaker, managing director of Testo Ltd. "This instrument can perform spot-check measurements in food preparation and deliveries, and can log temperatures in refrigerators, storage areas and transportation vehicles. We refer to this instrument as the HACCP Manager as it measures all food related temperature values you need to be HACCP **compliant** ."

Testo manufactures more different types of instruments and probes for the measurement of physical and chemical values than any other company in the world. It specialises in portable instruments and data loggers, which are capable of withstanding often-harsh environments, including extreme temperatures, high humidity and dust. Testo products are used in a wide range of market sectors, including heating maintenance, refrigeration and air conditioning, emissions monitoring, food and process industries. Testo can also offers a comprehensive calibration service for temperature measurements in the range of -18 (degrees) C to 300 (degrees) C.

Testo Limited, tel: +44 (0) 1420 544433.

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3/9/1 (Item 1 from file: 15)
DIALOG(R) File 15:ABI/Inform(R)
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High-tech health reports

Hutchcraft, Chuck

Restaurants & Institutions v111n9 PP: 28 Apr 1, 2001 ISSN: 0273-5520

JRNL CODE: RIN

DOC TYPE: Periodical; News LANGUAGE: English RECORD TYPE: Abstract

LENGTH: 1 Pages

ABSTRACT: Since August 2000, Fort Worth, TX, health inspectors have made rounds at restaurants and hotels bearing **handheld** computers and **foodservice inspection** software instead of blank forms, pens and clipboards. Now inspectors enter observations and **recommendations** directly into computers.

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DIALOG(R) File 5: Biosis Previews(R)
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**USE OF FIELD COMPUTERS FOR STATE FOOD SERVICE REGULATORY FOOD SERVICE
INSPECTIONS AND DAIRY FARM INSPECTIONS**

AUTHOR: PETERSON R W (Reprint)

AUTHOR ADDRESS: US PUBLIC HEALTH SERV, FOOD DRUG ADM, DENVER, COLO, USA**
USA

JOURNAL: Journal of Food Protection 51 (10): p827 1988

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00520 General biology - Symposia, transactions and proceedings

00530 General biology - Information, documentation, retrieval and
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13502 Food technology - General and methods

37010 Public health - Public health administration and statistics

37060 Public health: disease vectors - Inanimate

39002 Food microbiology - Food and beverage spoilage and contamination

39500 Disinfection, disinfectants and sterilization

3/9/6 (Item 4 from File: 16)
DIALOG(R) File 16:Gale Group PROMT(R)
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04209993 Supplier Number: 46157905 (THIS IS THE FULLTEXT)
**FDA ELECTRONIC INSPECTION SYSTEM VERSION 1.5 ALLOWS FOR TWO-WAY
COMMUNICATION BETWEEN OFFICE AND FIELD**

Food Chemical News, v37, n52, pN/A

Feb 19, 1996

ISSN: 0015-6337

Language: English Record Type: Fulltext

Document Type: Newsletter; Trade

Word Count: 1020

TEXT:

The Food and Drug Administration's Electronic Inspection System Version 1.5, a menu-driven software/printed manual package, allows for two-way communication between office and field, is integrated with the 1995 Food Code, will be able to add data bases on the National Shellfish Sanitation Manual and the Pasteurized Milk Ordinance, and is designed with hazard analysis critical control point implementation in mind.

Intended to help regulatory agencies manage inspection data and make reports in the most efficient manner possible, the EIS allows each agency to categorize the establishments it inspects to provide for customized data analysis and reports, according to the EIS foreword by Frank Bryan of the International Association of Milk, Food and Environmental Sanitarians. Bryan is chairman of the IAMFES Committee on Communicable Diseases Affecting Man.

The EIS package includes EPI TRACKER software, "which was developed by a sanitarian using the latest information from the IAMFES Committee on Communicable Diseases Affecting Man," Bryan said. The program not only assists with the investigation of foodborne outbreaks but also enables an agency to establish a data base to use in analyzing case reports and outbreak trends in a community, he noted, adding that EPI TRACKER information "can be used by program management to redirect food-safety program emphasis based on current epidemiological trends for their area. In the interest of improving food safety, I **recommend** that local, state and federal food regulatory agencies incorporate both the FDA EIS and the EPI TRACKER software as integral tools in their efforts."

As for the possibility of adding HACCP software in the future, Bryan noted that food regulatory officials, as well as food industry quality control staffs, "are embracing the HACCP approach to improve the safety of food for the public's welfare. A component of the HACCP system is documentation and recordkeeping ... The FDA EIS can aid agencies in implementing and documenting their HACCP-based programs; the flexibility of the software allows agencies to incorporate their own HACCP-based variances of every firm's own HACCP plan into the data base."

Also, an extensive technical reference library containing such useful documents as the FDA Foodborne Pathogenic Microorganism and Natural Toxins reference book and FDA Food Code interpretations can be made available on the EIS, Bryan said.

The system's two integrated components include the Office System, which runs on a computer that stores data about **food** establishments, including **inspection** results, and the Field System, which may be installed on a **portable** computer. With the Office System's data export feature, users can employ graphics to analyze performance data over time or feed other information systems that are used by the agency and helps program managers to monitor and redirect their programs as needed. The Field System contains comprehensive regulatory technical references, accepts the input of inspection data, generates inspection reports, and communicates with the Office System.

The Office System also features an ad hoc report feature, which allows users to access menus that design and save report formats for management reports routinely needed and can easily generate spontaneous, unique queries and reports for immediate management decisions; and a **complaint** management feature, which provides integrated input, ledger maintenance, assignment and tracking for routine establishment **complaints**.

The Field System features include:

previous inspections. Agencies can choose how many inspections are automatically loaded on the Field System for ready reference during an

inspection;

automatic repeat. Possible repeat violations are automatically flagged for inspector's concurrence and the previous violation statement can be automatically repeated and prepared for editing;

code citation. A definitive code section citation or the agency's standard violation statement for code requirements provides clear and defensible inspection reports;

"violation look-up." Possible violations can be found via key word, chapter or entire regulation data base for easy citation;

violation reporting. A specific description of the findings during the inspection increases management understanding of the violations and aids in enforcement actions;

departmental reporting. Findings may be allocated to specific operational areas of an establishment, creating sub-reports for departmental managers that cite only violations occurring in their area of responsibility;

realistic results. Violations are summarized by number of critical and noncritical items to produce an inspection score that may be directly comparable with previous scores for that establishment and with other establishment scores in that category of establishment;

reference library. An FDA technical reference library including Food Code interpretations, certified milk shippers' and shellfish shippers' list and food recall lists is incorporated with the Field System and may be kept up to date through FDA Prime Connection downloads. The FDA Foodborne Pathogenic Microorganisms and Natural Toxins reference book is also available for inclusion. State and local standard operating procedures and inspection manuals can be easily added by the user; and

system support. Toll-free technical help and system updates are available on-line 24 hours a day, seven days a week through the Prime Connection.

EIS Software Is Available to All Interested Parties Without Cost Via Prime Connection

The EIS software and documentation are available free by downloading from FDA Prime Connection and a **complete** package of disks and the spiral-bound manual are available for a charge from the National Technical Information Service (Department of Commerce). The software is considered public domain and "may be freely copied and distributed," the manual noted. "No licensing is required, but registration is encouraged using the form found in Annex 2." In its summary of the EIS Version 1.5 system, FDA noted that the system is intended for use by local, state and federal governmental jurisdictions "in tandem with their adoption of the FDA Food Code." The system also may be used by third parties such as health-care or day-care providers, consulting organizations or trade associations "for conducting mock inspections as part of quality assurance activities, as well as by operators of swim pools, camps, etc.," the manual said.

The **complete** EIS package consists of the spiral-bound manual, six (3.5-inch) floppy disks that contain one Office System, one Field System, the manual and the EPI TRACKER system. The NTIS order number is PB95-502365LMW. The **complete** package costs \$60. Handling fees are extra.

A copy of the manual only is available from Documents Express (6FCN 5214, 236 pages, \$63).

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DIALOG(R)File 20:Dialog Global Reporter
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15589532 (THIS IS THE FULLTEXT)
San Mateo County, Calif., Shuts Down Two Mexican Restaurants
Karen De Sa
KRTBN KNIGHT-RIDDER TRIBUNE BUSINESS NEWS (SAN JOSE MERCURY NEWS - CALIFORNIA)
March 12, 2001
JOURNAL CODE: KSJM LANGUAGE: English RECORD TYPE: FULLTEXT
WORD COUNT: 850

Heaping plates of beans and fresh salsa are being served again at two Mexican restaurants shut down by San Mateo County after reports of widespread food-borne illnesses.

But there have been lingering effects these past four months: lawyers wrangling with insurance agents; shop owners lamenting sluggish sales. And, perhaps most important to the restaurant-going public, the county health department has been prompted to action by the glare of television cameras and the bite of public scrutiny.

San Mateo County now has more safety inspections, more food inspectors and more public exposure of restaurants that violate safety codes. Hundreds have called the county **complaint** line since the October closing of Redwood City's Viva Mexico restaurant, where almost 250 people contracted a bacteria-borne illness.

The surviving family of 53-year-old Constance Williams-Pennel -- a Sunnyvale woman who died after a company luncheon at Viva Mexico -- filed a wrongful-death suit this month against the restaurant's owners, Martin and Isabel Toro. Another suit was filed in November on behalf of a boy and his mom who spent weeks suffering from gastrointestinal woes after enchilada meals.

Some patrons of T&B Tacos and Burritos in Belmont are also considering legal action. The restaurant, which sports a game room for children, was shut down March 1 after 29 people -- and by some victims' estimates as many as 60 -- reported illnesses after eating there on Feb. 23.

Both restaurants, once bustling family-friendly diners, have since reopened to dwindling crowds.

"It's a ghost town; there's nobody here," said Mitchell Haake, a T&B manager. He estimates business is down 90 percent since its much-publicized closing. A glum Martin Toro estimates a 40 percent loss in clientele.

The aftermath shows the power of food poisoning to shake people's confidence in where they eat.

"The reliance is blind and **complete** on the eating establishment," said Shawn Singh of San Carlos, a corporate lawyer who got sick along with his wife and three children after eating at T&B. "The reality of Silicon Valley life is you go out to eat often, so you're sort of stuck -- either you're hyper-paranoid and you never go out, or you trust that most restaurants do the right thing."

The closings have prompted stricter vigilance in San Mateo County, charged with inspecting 3,500 eating establishments, including food trailers, farmers markets and corner grocery stores. Food inspectors have conducted weekly and now monthly surprise visits at Viva Mexico since its Nov. 29 reopening. They've also investigated more than 400 eating establishments long overdue for inspections -- some that had not been checked since 1998.

They found egregious violations, said Environmental Health Director Dean Peterson, and he credits the public clamor for his department's snap to action. In 5 percent to 10 percent of the restaurants that were years overdue for inspections, safety measures had deteriorated, Petersen said, with food being improperly stored and garbage bags left open. More frequent visits should correct that, he said.

On Tuesday, the county is scheduled to authorize funds for an additional food inspector, bringing the total to 12.5 full-time positions. In May, the environmental health department will expand its Web site to include a year's worth of inspection reports. Specific violations and inspectors' notes on each establishment also will be available. And beginning in August, restaurant managers will be required to post their most recent **inspection** reports.

Eventually, all food inspectors will be armed with hand-held wireless computers so they can shoot reports instantly to the Internet. The county manager has authorized more than \$80,000 to buy the equipment.

But for the victims of food poisoning, the stepped-up efforts aren't that impressive.

"It's unfortunately human nature that when there's a tragic event, it galvanizes people into action, but they clearly should have been vigilant all along; that's their charter," Singh said of the health department.

As time passes, chances lessen that the source of contamination will be found.

After floating theories about tainted cilantro and reused salsa, investigators never did discover what caused the shigella outbreak at Viva Mexico.

At T&B, five of 12 employees sampled have tested negative for the viral infection believed to have been passed around groups of families gathered at the restaurant. Test results for the others have not come back yet. None of the workers felt the effects the restaurant patrons reported -- vomiting, nausea and diarrhea. So what they shared that night is still unclear -- the airborne or food-borne virus customers contracted could have come from a sneeze, or a steak.

That's what frustrates Haake, the son of T&B owner Marjorie Haake. Small business owners face collapse when things that are beyond their control occur, he said. Although inspectors found some health code violations in recent visits -- such as non-sterile kitchen equipment and employees' failure to wash their hands with soap -- the restaurant was given high marks of approval as recently as June.

"This has been blown out of proportion and exaggerated," Haake said. "It has devastated my business, and I won't be here much longer."

To view restaurant safety reports, visit San Mateo County's site, www.co.sanmateo.ca.us/health.dir/food/index.html, on the Web.

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DIALOG(R) File 88:Gale Group Business A.R.T.S.
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Challenges from an Outgoing President.

Coleman, Gary

Journal of Environmental Health, 62, 10, 4

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TEXT:

NEHA is the home of the professional environmental health practitioner. That was a fact in 1973, when I became a member, and remains so today.

This organization has a long history of setting standards for programs and services that address our professional practice. The credentials program is a prime example of NEHA's quest for excellence--a quest that members expect. The NEHA staff routinely survey affiliate organizations, using the information collected in this way to encourage universal registration. In addition, a NEHA committee is considering methods of encouraging states that do not have mandatory registration acts to enact such legislation. The committee also is looking at ways of communicating with states where registration acts are being threatened with "sunsetting" legislation. Ultimately, the goal is to have one nationally recognized exam and credential program for environmental health practitioners. That program should be the NEHA R.E.H.S./R.S. credential since NEHA is the respected repository of technical competency criteria associated with the practice of environmental health. The challenge is to continue to develop professional criteria and to work with other public health-related groups to gain support for the R.E.H.S. credential and the criteria upon which it is based.

NEHA serves as a mouthpiece for our profession, addressing contemporary issues through resolutions and position papers. Issues NEHA recently has addressed are brownfields, children's environmental health, endocrine disruptors, and the use of irradiation as a food safety tool. NEHA could, however, go much further in this realm by establishing an influential presence in the nation's capital, positioning itself strategically to educate decision makers about members' issues.

Continued development of partnerships with other associations and governmental entities also will enhance NEHA's sphere of influence. When partnered with NEHA, organizations that specialize in different areas of environmental health, such as food and on-site sewage disposal, speak with a united voice. NEHA also benefits from such partnerships, through opportunities to participate in research grant programs, which further its reputation within the very organizations that create policy.

The world continues its transformation into a global community. In our hemisphere, the North American Free Trade Agreement (NAFTA) allows agricultural goods to flow freely across American borders. So NEHA should actively seek partnerships with our professional friends worldwide. Currently NEHA enjoys excellent relationships with the International Federation of Environmental Health (IFEH), the Chartered Institute of Environmental Health (CIEH) in the United Kingdom, and the Canadian Institute of Public Health Inspectors (CIPHI). I have had the distinct pleasure of meeting with Jamaica's Institute of Public Health, and I sensed a mutual desire to form a close alliance. Environmental health issues are global issues, and partnering offers our members advantages of mutual understanding and acceptance. Such partnerships also present opportunities to expand NEHA's Sabbatical Exchange Program, thus providing members with opportunities to expand their horizons.

Another challenge NEHA has taken on is that of addressing new or controversial issues in sessions held during the Annual Educational Conference (AEC). Standing-room-only audiences have been the norm for programs addressing emerging pathogens and bioterrorism. Because these educational sessions have been so successful, NEHA has received a grant to provide expanded coverage of a potential environmental health problem. During this year's AEC, Dr. Michael Fox addresses the ethics of biotechnology proving that NEHA is attuned to the desire of its members to

know not only the science of issues, but also the social influences affecting those issues. The challenge NEHA has accepted is to provide relevant education and sometimes to do so even before our members become aware of their needs.

NEHA should nurture relationships with students of environmental health and increase the opportunities provided them. Currently, NEHA and the American Academy of Sanitarians sponsor scholarships, and poster sessions offer students a chance to demonstrate their research at the AEC. We must remember that students enrolled in accredited schools of environmental health are tomorrow's potential NEHA members and that NEHA must develop creative methods of recruiting them. Perhaps, in cooperation with our friends in academia, NEHA could establish a program that links students with mentors?

New technologies have increasing applications for study and documentation in the field of environmental health and protection. A miniature data logger continuously records thermocouple readings while suspended in a liquid media. Another model, the size of a pack of cigarettes, uploads readings from eight separate thermocouples. Laser-equipped infrared thermometers offer a modern method of screening food temperatures. **Inspections** can be **completed** on **handheld** palm-sized computers. The number of instruments and software under development for environmental health continues to increase while the size continues to decrease. Yet another challenge facing NEHA is to provide educational opportunities in these areas of technology. In addition, the flowering of Internet technology has challenged NEHA to expand its own Web-based capabilities by offering Web-based training, providing links to resources, and constantly upgrading its communication abilities.

As I prepare to inhabit that afterworld of past-presidents, I leave NEHA officers and staff with the aforementioned challenges. I leave you, my fellow members, challenged to ensure that NEHA "stays the course" and "sets its sails" toward new horizons in member service and the representation of our profession. With much pride and humility I have attempted to serve NEHA, the premier association of--and for--environmental health and protection professionals. It is my prayer that my year as president leaves NEHA more attuned to the needs and desires of the membership, more respected by the outside world, and more aware of its potential for greatness. Thank you for the opportunity to represent you.

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DIALOG(R)File 484:Periodical Abs Plustext
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04756709 SUPPLIER NUMBER: 53956422 (THIS IS THE FULLTEXT)
Food safety diagnostics: Ensuring safe food for soldiers
Beach, John C
Army Logistician (FARL), v32 n3, p20-23, p.4
May/Jun 2000
ISSN: 0004-2528 JOURNAL CODE: FARL
DOCUMENT TYPE: Commentary
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WORD COUNT: 2831

ABSTRACT: Beach discusses food safety in the US Army. US troops are deployed worldwide to places where commercial food sanitation standards may be inferior than those at home and enforcement of those standards may be less than optimal. Food-borne disease outbreaks are a significant threat to our deployed fighting forces, capable of incapacitating many troops at any given moment, and this is a risk the Army cannot afford to take.

TEXT:

The United States has the safest food supply in the world. Because various regulatory agencies continuously monitor food safety, Americans take the safety of their food for granted. Still, each year up to 81 million Americans suffer food-borne illnesses, and 9,100 die.

U.S. troops are deployed worldwide to places where commercial food sanitation standards may be inferior and enforcement of those standards may be less than optimal. Food-borne disease outbreaks are a significant threat to our deployed fighting forces, capable of incapacitating many troops at any given moment. This is a risk the Army cannot afford to take. The Army Veterinary Service must do all it can to conserve the Army's fighting strength through an active food-safety surveillance program. Americans expect safe, high-quality food, and U.S. military personnel expect no less.

Having soldiers consume only operational rations in a theater of operations would minimize the threat of a food-borne outbreak. However, consuming only operational rations without class A (freshly prepared food) supplementation would create a serious morale problem with deployed troops. Therefore, field commanders want to maximize the availability of freshly prepared meals. Class A rations, particularly locally procured food items, present the highest danger as a source of foodborne diseases.

In the past, Army food inspectors were unable to ensure food safety in a field environment because portable diagnostics were not available. They based their foodsafety efforts on sanitary inspections of food establishments and periodic tests of food in a centralized laboratory. Installation-level veterinary inspection programs sought to identify food quality problems. However, recently developed commercial technology allows for rapid, presumptive screening of high-risk food for bacterial pathogens, spoilage organisms, and pesticides in the field before it is served to soldiers. The 18th Medical Command Veterinary Services, part of U.S. Forces Korea (USFK), is using this technology to ensure that the food we provide to soldiers during peacetime is safe. This technology also will permit high-risk foods to be screened on the battlefield.

The position of the 18th Medical Command Veterinary Services is that to ensure a safe food supply in a forward deployed theater, rapid food-safety laboratory diagnostics must be used.

Food-borne Disease Threats

The majority of food-borne disease outbreaks result from unintentional contamination of a product as a result of inappropriate processing or handling. Outbreaks caused by substandard sanitation or improper food handling are well documented. In 1985, an estimated 350 school children and staff at a Georgia elementary school developed febrile gastroenteritis associated with the bacteria *Salmonella enteritidis*. The food source was identified as turkey salad that had been refrigerated improperly before it was served. In 1997, the largest beef recall in history occurred as a result of *Escherichia (E.) coli* bacteria-contaminated ground beef processed by Hudson Foods of Columbus, Nebraska. The extent and swiftness of this recall resulted in less than 20 illnesses, compared to the Jack-In-The-Box fast-food restaurant outbreak in 1993 that resulted in over 700 illnesses and several deaths. In 1996, a large food-borne disease outbreak occurred

in Japan, causing more than 5,000 illnesses and 6 deaths-primarily among schoolchildren. School lunches contaminated with E. coli bacteria were identified as the source.

Intentional contamination of our food supply with biological or chemical agents also is a significant threat. Bioterrorist attacks on our food supply could be covert or announced and could be accomplished with selected bacterial pathogens or toxins. The United States actually experienced one such attack in 1984. In The Dalles, Oregon, a religious cult contaminated 10 salad bars in restaurants with the incapacitating bacteria Salmonella typhimurium on Election Day to influence the results of county elections. Within 1 month, over 750 cases of Salmonella typhimurium were diagnosed. It took more than 2 years of diagnostic effort to determine that this food-borne outbreak was intentional. Similar intentional acts of bioterrorism against LT.S. forces are a real threat and could be difficult to detect without an active foodsafety surveillance program.

U.S. Government Initiatives

President Clinton's fiscal year (FY) 1999 budget requested \$101 million to improve the safety of the Nation's food supply. The request included an increase in research to develop new tests to detect food-borne pathogens and assess risks to the food supply. Further, the President's FY 2000 budget includes a \$144 million request for the Department of Health and Human Services for "bioterrorism preparedness."

A key step in establishing an effective food-safety program in a forward-deployed theater is to have adequate laboratory diagnostics that can identify and characterize rapidly any agent that could cause a foodborne disease outbreak. Within the 18th Medical Command, food-safety efforts have focused on monitoring potentially hazardous foods as they move through the supply system. To enhance current USFK food-safety and -quality programs, the veterinary services decided to use commercial rapid-screening food laboratory diagnostics. Some capabilities of these diagnostics include

- Microbiology testing of both liquid and solid foods.

- Food surface sanitation validation.

- Dairy product shelf-life prediction testing.

- Pesticide analysis of fresh fruits and vegetables.

- Continuous internal product temperature monitoring of perishable food while in transit.

Commercial rapid food-safety diagnostics have been procured and deployed throughout the Republic of Korea as an integral part of our active food-safety surveillance program. The immediate availability of laboratory data at key food distribution points within the Republic of Korea ensures that all USFK personnel have safe, high-quality food.

Commercial Rapid Food-Safety Diagnostics

Today's consumers demand safe food. The commercial food industry's ability to identify bacterial pathogens and unsafe residues has resulted in an almost fivefold increase in food recalls by major manufacturers since 1988. New technology allows Government regulatory agencies to identify a bacterial pathogen and trace it back to its source more rapidly. The key to this new technology is the availability of rapid food-safety diagnostics.

These rapid food-safety diagnostics provide a quick, "positive or negative" answer before the food product enters the distribution system. Tests take up to 30 hours to **complete** because of the requirement for a bacterial growth enrichment period. This growth enrichment period is necessary to increase the total number of bacteria so they can be detected using current technology. A negative answer means that the product does not contain that particular bacteria or toxin and no further testing is required. A positive answer means that further testing is needed at a reference laboratory using standard laboratory methods to confirm the actual presence of the bacteria or toxin. For example, rapid screening for Salmonella typhimurium requires approximately 24 hours to **complete**. To confirm the existence of this organism, standard laboratory methods of isolation for 96 to 120 hours must be used.

USFK Food-Safety Diagnostic Capabilities

The 18th Medical Command Veterinary Laboratory has the following rapid food microbiology capabilities

- Prepared growth media. Petrifilm Plates, developed by 3M, provide standard bacterial plate counts, total gram-negative coliform counts (indicating fecal contamination), and yeast/mold counts on fluid products.
- Pathogel, developed by Charm Sciences, Inc., detects the presence of E. coli and Salmonella.

Blenders. The Stomacher Laboratory Blender, manufactured by Seward Ltd. of London, England, is used to conduct microbiological testing on solid food products. The Stomacher blender emulsifies the product in a buffer solution from which we draw sterile liquid aliquots (samples) for microbiological testing.

Portable rapid diagnostic kits. USFK is procuring these kits to screen for bacterial pathogens and toxins such as E. coli, Bacillus cereus, Listeria monocytogenes, and Staphylococcal enterotoxin B. With these kits, most results can be obtained in 24 to 48 hours. There are two very important benefits of this capability: the kits eliminate the delay caused by obtaining routine results from a stateside laboratory, and they are 100 percent transportable to support class I (subsistence) operations in the field.

The Charm Sciences, Inc., Lum-T is an instrument used to **complete** several diagnostics, such as sanitation validation, fluid dairy shelf-life prediction assay, and pesticide assay.

This photo shows a portable food microbiology lab in a field environment.

Polymerase chain reaction (PCR) technology.

This is "DNA fingerprinting" technology that can identify a specific bacterial genus and species. This will overcome the inability of rapid microbiology diagnostics to identify specific bacterial organisms (by genus and species). Unfortunately, the current PCR equipment is not field transportable and requires a fixed laboratory. However, the Air Force Force Protection Battelab at Lackland Air Force Base, Texas, is testing a field portable PCR system made by Idaho Technology, Inc.

Surface sanitation test. Another aspect of food safety includes monitoring the cleanliness and sanitation of food contact surfaces. This is extremely important in contract dining facilities that employ personnel from developing countries to handle and prepare food. All efforts to ensure that food is safe while in the supply system can be defeated by improper handling and preparation. The PocketSwab (available from Charm Sciences, Inc.) is a self-contained swab designed to determine the effectiveness of cleaning and sanitizing food contact surfaces by measuring adenosine triphosphate (ATP) levels. ATP levels indicate the organic matter present on a surface, which potentially can support bacterial growth. A properly cleaned and sanitized surface will have very low levels of ATP (less than 5,000). When ATP levels are very high (more than 100,000), the surface is unacceptable. These extremely high ATP levels are commonly associated with the presence of bacteria, either pathogenic or spoilage. The PocketSwab allows us to obtain quantifiable numbers to ensure that food contact surfaces are clean and sanitized before processing any food. This reduces the possibility of food being contaminated while it is being prepared.

Pesticide test. The Charm Pesticide Assay (by Charm Sciences, Inc.) can screen locally purchased fresh fruits and vegetables for pesticides in 20 minutes. Since many nerve agents are organophosphates, this technology has the potential for detecting a nerve agent in chemically contaminated rations. To do this, specific tests must be developed for each nerve agent.

Temperature-monitoring devices. Temperature damage, either in transit or in storage, always has been a danger for perishable foods. Our ability to monitor the extent of damage resulting from a refrigeration failure always has been very subjective. The MonitorMark (by 3M) is a temperature-sensitive strip that turns blue if the temperature exceeds 40 degrees Fahrenheit. In instances where severe temperature damage occurs, such as at 70 degrees Fahrenheit, the strip turns blue more rapidly. It does not determine when the abuse occurred or its extent, but it alerts the user that temperature damage of the product has occurred. This is an inexpensive means of monitoring chilled food shipments (which should be kept at 34 to 40 degrees Fahrenheit). An even better way to monitor product temperature is with the Sensitech TempTale. The TempTale is a computer chip temperature-monitoring device that can screen internal product temperature continuously, record over 2,000 temperature readings, and provide data analysis when downloaded into a computer. The data analysis feature enables the food inspector to determine the extent of temperature damage to a particular product and make instantaneous decisions on its disposition. For example, if a shipment is received and there was no temperature damage, the product will be issued normally. If a temperature abuse in transit is documented, that product will be priority-issued before its quality deteriorates further. In conjunction with temperature monitoring, routine

food microbiology surveillance also is being conducted to determine the level of spoilage bacteria present, as well as to ensure the absence of pathogenic bacteria.

Time temperature indicator (TTI). The FreshCheck TTI, from Lifelines Technology, Inc., is designed as a visual aid in determining the extent of temperature abuse in meals, ready to eat (MBE's). It is designed to change colors at the 50- to 100-degree Fahrenheit range. Visual reading to determine color changes of the TTI is arbitrary, depending on the skill and experience of the inspector. We have eliminated this variable by using a densitometer.

Densitometer. A densitometer is an optical density-measuring device that provides the user with a specific optical density reading of the TTI. Lifelines Technology, Inc., also has developed a chart with optical density readings that correspond to the remaining MRE shelf life at various storage temperatures. MRE shelf life is temperature dependent. The inspection test date printed on each case is designed for a storage condition of 80 degrees Fahrenheit for 3 years. MRE's stored at 60 degrees Fahrenheit will have a much longer shelf life than MRE's stored at 90 degrees. This technology aids in assessing unit-level MRE storage conditions without an on-site visit. The ability to determine the remaining shelf life without opening the packages will result in a cost savings to the logistics community.

A densitometer is used for measuring optical densities on time temperature indicators (TTI's) on MRE cases. The patch in the center of the case is a TTI.

Fluid dairy shelf life validation/prediction assay. Combined with microbiology screening tests, this test, developed by Charm Sciences, Inc., is used routinely by Army food inspectors to determine the shelf life of extended-shelf life (ESL) milk. This milk has a 70- to 90day shelf life and requires refrigeration. ESL milk can be stored beyond this period if it meets safety and quality standards. A qualitative assay will detect increases in microbial ATP, which correlate with the presence of spoilage or pathogenic bacteria before any visible changes are seen in the milk. This enables the inspector to advise the logistician to priority-issue a product before it becomes unacceptable. The result is still a highquality, safe product for soldiers and their families. Similarly, an assay also can be used to extend expiration dates beyond those on the label.

Future

The threat of weapons of mass destruction is very real. One concern that faces the U.S. Government daily is bioterrorism. Kits for detecting chemical agents in water are well developed and effective. However, our ability to detect chemical and biological agents in food is very limited. Majesco Biologics and the Army Soldier and Biological Chemical Command in Natick, Massachusetts, working independently, are developing biosensor technology to identify bacterial pathogens and toxins in only 15 to 30 minutes by eliminating the requirement for a 24-hour bacterial enrichment phase. This new technology is extremely sensitive and can detect much lower levels of bacteria and toxins than current rapid diagnostics can. Although fielding of biosensor technology is 2 to 3 years away, these advances should be adopted by the Army Veterinary Service to maintain an effective food-safety surveillance program.

This proactive approach to food safety and bioterrorism prevention does not agree with a White Paper published recently by the Office of the Surgeon General entitled "The Vulnerability of the DOD Food Supply to Chemical/Biological Terrorism-The Role of the Army Veterinary Service." This paper advocated a post-epidemiological investigation to determine the source of a biological agent attack. The authors stated that the use of current surveillance technology was too expensive and too manpower intensive. Admittedly, no surveillance system can be 100-percent accurate. In the event of a food-borne disease outbreak, intentional or unintentional, faster identification and characterization of the agent will aid in the medical treatment of those affected. It also will help our medical personnel determine if exposed but asymptomatic personnel require prophylactic treatment. It is the 18th Medical Command Veterinary Services' position that having the capability to screen routinely for select bacterial pathogens and toxins would be a deterrent to bioterrorism.

In support of the Army Medical Department's Medical Reengineering Initiative to redesign its combat health support units, the Army Veterinary Service has developed a food procurement detachment with a portable food microbiology capability. This capability emphasizes rapid food-safety

diagnostics in division rear and corps and echelons-above-corps areas of operations. Fielding is scheduled for fiscal year 2002 in the Republic of Korea.

In my opinion, there does not appear to be a collaborative effort between commercial industry and military research laboratories. However, it is encouraging that various Government agencies, such as the Army Soldier and Biological Chemical Command, are developing biosensor technology. Technology continues to improve at a very rapid pace; equipment that is state-of-the-art today may not be tomorrow. Therefore, the contents of the field food microbiology set will be an ongoing evolution. As one item becomes obsolete, it will be replaced by the newest off-the-shelf technology. This new technology will not be intended solely for field use but will be part of our ongoing, active food-safety surveillance program during peacetime.

Natural food-borne outbreaks and bioterrorism will continue to occur worldwide. An active food-safety surveillance program that conducts rapid, presumptive laboratory testing helps to ensure a safe food supply. Our goal is to provide food inspectors with real-time laboratory data for making on-the-spot **recommendations** concerning food safety and quality. Making use of available commercial technology is the easiest and most efficient way to achieve this goal. ALOG

Captain John C. Beach currently is pursuing a master of science degree in food microbiology at Texas A&M University. He was the chief of U.S. Forces Korea food Safety in Yongsan, South Korea, when he wrote this article. Captain Beach has a doctor of veterinary medicine degree from Oklahoma State University and is a graduate of the Army Medical Department Officer Advanced Course.

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0698266 (THIS IS THE FULLTEXT)
NETWORKING: A GIANT STEP FOR THE SMALL: Getting wired can be daunting, but even a one-person operation can reap big benefits
By Kevin Kelly in Chicago
Business Week, October 2, 1995, Number 3444, Pg 16E
JOURNAL CODE: BW ISSN: 0007-7135
SECTION HEADING: SPECIAL REPORT ENTERPRISE: Technology: Networking
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TEXT: Agents at Kim Dawson Agency Inc. in Dallas used to tack elaborate flow charts, each 2 1/2 feet long, to the office wall to keep track of which of 115 models were hired for particular fashion photo shoots. The decidedly manual system forced agents to wander around the room when booking models, often stumbling over telephone cords, checking a dozen different charts to make sure a model wasn't committed. Now and then, though, agents double-booked, forcing embarrassing cancellations later.

In 1991, though, the agency virtually eliminated the double-booking problem by installing 12 personal computers and a Novell Inc. network that linked its 11 agents. How? A local programmer developed software that checked to see whether models were already booked before they could be committed to a job.

The benefits of the system, which cost the agency \$50,000, didn't stop there. Computer systems manager Tammy Meche says the network, which also allows agents to do bookings faster, has helped Dawson push sales up more than 50% in the past four years, to a projected \$8 million in 1995--without adding any new agents. Says Meche: ``We probably couldn't have done it without the network."

The lesson? Networking technologies--local-area networks (LANs), client-server systems, electronic mail--aren't just for big companies. Businesses as small as a single-person shop can reap tremendous benefits, including faster time to market, higher productivity, and closer contact with customers, by drawing on the same communications infrastructure that companies such as 3M, Citibank, and Caterpillar have deployed. It's possible to become wired for as little as \$100--or as much as \$500,000--depending on your ambitions.

Getting the technology right is never easy, but it can be especially daunting for small businesses. Many smaller companies don't have the in-house talent to get wired and keep a network humming. Or top management may be so swamped with other problems that it can't spare the time to learn the benefits of network technology. And small businesses have little margin for error: A botched network project that might cost a big corporation a penny of quarterly per-share earnings could wipe out a small one. So it's no surprise that many small businesses simply avoid thinking about networking. That could be a big mistake, says Clark Witmer, vice-president for logistics at Morton Metalcraft Co., a \$55 million sheet-metal fabricator in Morton, Ill.: ``Small businesses won't grow these days unless they construct the right technological platform."

When it comes to getting networked, in fact, small businesses can have some big advantages. In many cases, a small outfit hasn't been using technology for long, so it ``doesn't have to plan around an installed base," says Andersen Consulting networking specialist Christopher Teeter. That means smaller companies can buy what works best for them without worrying about the thorny network-integration questions that bedevil large corporations with ``legacy" computer systems. And lack of knowledge about how to install the system isn't the drawback it once was: There are thousands of small consulting firms and lots of network-literate college graduates to help out--for a price, of course.

CUSTOMIZED SETUPS. Good planning, though, is essential. Just ask Koch Supplies Inc., a \$70 million manufacturer and distributor of butcher

supplies based in Kansas City, Mo. When Koch needed new software to run its network--which handles everything from order entry to shipping--the company hired software maker J.D. Edwards & Co. to do a needs assessment and pulled in Arthur Andersen to run software trials. The selection process alone cost Koch \$200,000, but it allowed the company to choose and customize a software package that has dramatically boosted the number of orders it can process in a day--to 50,000 from 1,000. Vice-President John Starr figures the system will cut inventory costs by \$100,000 annually and save \$100,000 in labor costs.

Still not ready for such a big commitment? You can still get started in networking--by simply opening an E-mail account. E-mail and fax services allow small companies to vastly improve their contact with customers and suppliers. Sharper Finish Inc., a \$4 million Chicago manufacturer of commercial laundry equipment, uses AT&T Mail to fax delivery schedules, product announcements, and price information to its 175 worldwide distributors. Before signing up for the service last year, the company typed up newsletters and sent them via mail or fax. Now, an assistant types a newsletter into a computer and sends it out over the AT&T network. "We get information into our distributors' hands much more quickly now," says Vice-President Craig Roberts.

So what kind of network is the right kind? That depends on what a business wants to do. Simple E-mail is a must for a one-person office, while a LAN could be important in a business with as few as three employees where co-workers need to share information. Mark Ingwer, a consultant who does market research for telecommunications companies, uses CompuServe Inc.'s E-mail service to send proposals and queries to clients. CompuServe, which costs him \$10 a month, also gives him access to the information-rich Internet. Recently, he pulled information on what the optimal applications are for wireless data communications off the Net. The information he has gleaned from the Net, he says, "has helped me put together some smart proposals."

Small businesses don't have to shy away from more sophisticated technologies, either. Audits International Inc., which conducts **food** -safety **inspections** for **restaurant** chains, including Taco Bell, equips each of its 120 inspectors with a Newton **handheld** personal digital assistant from Apple Computer Inc. and a Canon Inc. printer. The combination allows the inspector to print a report on the spot for restaurant managers, enabling them to address any problems immediately. In the past, when inspectors used multipage forms, it took several days to get out a report.

MORE SUPPORT. Still, adopting networking technology doesn't necessarily lead to corporate nirvana. It's easy to stumble. When Chicago-based Assist Network Development Inc., an installer of computer and telephone cabling, decided it needed to get more data to its nationwide offices, the company installed Lotus Development Inc.'s Notes, a popular groupware software program that allows people to work together on documents and schedules. But the company, which expects to post sales of \$10 million this year, budgeted only \$50,000 for a project that has now eaten up over \$300,000 and taken nine months. The problem? Executives became so enamored with Notes capabilities that they kept ordering consultants to write more applications for them. "We didn't have proper controls," says CEO Stephen Watkins.

In general, groupware presents big networking challenges for small business. Most groupware systems require administrators to keep them current--and to stop them from running amok. That adds a layer of cost that small businesses need to consider, says Todd Miller, a partner in Revere Group, a computer consulting firm in Northbrook, Ill., that put in its own Lotus Notes system last year. The system's **complexity** forced the firm, which is 100 consultants strong, to hire extra support staff. "It's an inevitable and necessary evil," says Miller.

But would Miller junk his system? No way. He says Revere consultants now use the Notes system to swap information that allows them to solve thorny issues and write better proposals--just like bigger rival Andersen Consulting, whose Notes-based system is one of the industry's best. And

that may be the ultimate benefit of networking technology for small businesses: It gives them many of the resources of their bigger rivals, without all the baggage that comes with size.

TABLE:

(available online)

Tools for the Information Age

LOCAL-AREA NETWORKS	If the business is big enough to have several computers, link them together in networks that allow coworkers to easily share information and computing resources.
PORTABLE COMPUTERS	Notebook computers can keep the salesforce plugged into the home of fice. Handheld data terminals and personal digital assistants can be had for a few hundred dollars and can be used by low-skilled workers to gather data in the field.
E-MAIL	A cheap and easy way to stay in touch with customers and suppliers. Small businesses can buy electronic-mail services from telephone companies or use the Internet through a variety of providers including online services such as CompuServe, America Online, or Prodigy.
FAX	Don't want to stand at the fax machine all day sending faxes? Convert a PC to a ``fax server" that can do the job of a dozen separate fax machines--and relay incoming fax messages to any computer on the network. An alternative: use a fax service such as AT&T Mail to do the job for you.
GROUPWARE	Even a small business with 100 to 200 employees can benefit from groupware programs such as Lotus Notes. It's a good way for employees to swap information and collaborate.

DATA: BUSINESS WEEK

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Casio, Inc. Announces Partnership With VSAT, Inc.
PR Newswire
Thursday, November 29, 2001 09:00 EST
JOURNAL CODE: PR LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT
DOCUMENT TYPE: NEWSWIRE
WORD COUNT: 812

TEXT:

DOVER, N.J., Nov. 29 /PRNewswire/ - Casio, Inc., in collaboration with VSAT, Inc., announce the commercial release of the HACCPPRO(TM) 3.0 digital compliance solution designed to assure comprehensive, enterprise-wide HACCP compliance -- without paper. The patented Temperature Acquisition Module (TAM) is manufactured by Atkins TempTec exclusively for use with VSAT's new HACCPPRO(TM) solution.

Powerful Mobile Platform

The HACCPPRO(TM) System uses Casio's Industrial CASSIOPEIA, the EG-800 -- a rugged industrial device which uses the Microsoft Windows CE (Pocket PC) operating system. The EG-800 features a 65,536 pixel color display, 32MB of RAM and 32MB of ROM. Other features include a rugged, drop resistant and splash resistant design that makes it perfect for use in food service industry deployments.

"Providing reliable, cost effective solutions to today's mobile computing requirements is what Casio does best," said Gary Schultz, director of marketing for Casio's Mobile Information Products Division. "We are delighted to be part of the VSAT, Inc./Atkins TempTec partnership and the commercial release of the new HACCPPRO(TM) solution." The Casio hardware along with the Atkins' TempTec(TM) thermocouple probe and VSAT's patented software provide exceptional speed and ample data storage capability. The VSAT technology ensures temperature measurements that are fast, accurate and precise.

Finger Touch Operation

HACCPPRO's(TM) finger touch-screen design and interactive expert guidance effectively lead users through the optimum process for preparing and serving food. The ergonomic, turnkey, packaged solution is easy to use, and provides real-time audible and visual warnings to out-of-standard situations and guides users through the necessary corrective actions. Rich layers of help screens provide real-time training on the latest HACCP guidelines and food safety alerts. All process and temperature data is automatically stored with date and time stamps to ensure authenticity and accuracy.

Online Management Tools

VSAT's online services provide management with unprecedented visibility, control, and quality assurance by making corporate compliance data and reports accessible throughout the enterprise. Dr. Connie Araps, president and CEO of VSAT, Inc., states:

"By working alongside our customers to determine their business needs, we have been able to deliver a paperless, mobile system that makes it easy to

follow FDA , HACCP, and corporate quality guidelines . We provide management with the assurance that they are in compliance everyday, everywhere. Our on-line compliance service will certify the authenticity and accuracy of HACCP data collected from anywhere in the enterprise anytime." The HACCPRO(TM) automated solutions assure food safety -- a necessary competitive advantage to companies seeking to achieve and sustain market leadership.

Network-to-Enterprise

The networked solution is modular, customizable and can be scaled to support enterprise-wide data collection, automated custom reporting, documentation, analysis, and communication at a fraction of the cost of paper-based methods. HACCPRO's(TM) seamless integration enables you to link the back of the house, the front office and the enterprise with desktop applications. These networked applications can be configured for multiple database platforms including SQL, Oracle, and Sybase, or for export to spreadsheets and a variety of industry standard report writers.

Casio, Inc.

Casio, Inc. is the U.S. subsidiary of Casio Computer Co., Ltd., Tokyo, Japan. Casio, Inc., markets handheld personal computers, keyboards, digital cameras, portable color TVs, timepieces (Wrist Technology), cash registers and other consumer electronic products. Casio -- the unexpected extra -- for more information visit <http://www.casio.com>. Casio, Inc. is headquartered in Dover, N.J.

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VSAT, Inc.

VSAT provides global solutions that reduce the risk, liability, time and cost involved in assuring compliance with corporate and government safety and quality standards. We lead the industry in offering mobile, comprehensive HACCP solutions that are tailored to meet dynamic corporate needs. The patented software and partnerships with industry leaders provide for best-of-breed hardware, metrology devices and networked services that ensure the comprehensive collection of accurate, verifiable data in even the most complex and distributed environments. VSAT, Inc. is located in Miami, FL. Contact VSAT at <http://www.vsatinc.com>, or 888-652-3663.

Atkins TempTec, Inc.

Atkins TempTec(TM) provides global temperature measurement solutions that allow operators to offer the safest, highest quality food to their customers. Atkins is the industry leader in thermocouple technology for the food service industry. Atkins' unique designs and patented parts ensure reliability, durability and accuracy. The industry partnerships, knowledgeable staff, and long-standing relationships with chain restaurant leaders ensure the highest quality products, service and education in foodservice. Atkins is

headquartered in Gainesville, FL.

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Apigent Solutions(TM) Announces Support of Cognos(R) Series 7
PR NEWSWIRE
November 16, 2001
JOURNAL CODE: WPRW LANGUAGE: English RECORD TYPE: FULLTEXT
WORD COUNT: 401

- Cognos Series 7 offers customers industry's most scalable, integrated, and

all-encompassing business intelligence solutions ever -

OKLAHOMA CITY, Nov. 16 /PRNewswire/ -- Apigent Solutions(TM), an application service provider (ASP) to the restaurant, retail and hospitality industries, today announced support for Cognos(R) Series 7, the industry's most comprehensive, enterprise-class business intelligence solution. In partnership with Cognos (Nasdaq: COGN; TSE: CSN), the leading global provider of business intelligence solutions, Apigent integrates Cognos business intelligence solutions into the company's flagship product, ZEOM.net(TM).

ZEOM.net is an Internet-based operations information service that enables companies to *monitor* and control geographically-dispersed business locations from any place, at any time -- yielding real-time information that managers can use to make decisions that positively impact a company's profitability and performance. Currently, Apigent products and services are used in more than 1,000 restaurant and retail sites in the U.S. and Canada.

"Using Cognos Series 7, we can deliver valuable, forward-thinking business solutions for our clients that equip them not only to compete in their respective marketplaces, but lead them," said Jim Melvin, CEO of Apigent. "Our solution is helping our clients achieve their business objectives and Cognos' industry-leading technology is extremely attractive in that regard due to its flexibility, scalability, and power. It opens up a world of possibilities for our clients."

About Apigent Solutions

Apigent Solutions is the creator of products and services that help multiunit operators transform raw data into actionable information they can use to more effectively manage their business. Apigent offers a variety of innovative technologies, including the SunTone(TM)-certified ZEOM.net operations information service, centrally hosted back office applications powered by Lawson(TM) and the *IntelliKitchen* (R) kitchen management system. The company is a Premier member of the IBM Service Providers for e-business Initiative and one of Sun Microsystems' Elite Plus service providers.

Apigent originated as the technology development subsidiary of Chickasaw Holding Company, a \$200 million telecommunications company with nearly 150,000 customers in more than 30 states. Chickasaw remains a major shareholder in Apigent. For more information, visit <http://www.apigent.com> or call 800-664- 8228.

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